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ABSTRACT

This action research project implemented and evaluated an intervention for improving student engagement in the learning process. The targeted population consisted of first, third, and fifth grade students in a small, traditional, middle class community, located in central Illinois. Evidence of non-engaged behaviors were documented from teacher observations, samples of students' work, and anecdotal records. Probable causes contributing to the problem included societal issues such as social dissolution, amount of money allotted per pupil, and negative student attitudes; and school related issues, including inadequate curriculum, assessment, and teaching strategies. In order to address the problem, cooperative learning, higher order thinking skills, and multiple intelligences were addressed through curricular revisions and lesson delivery. Post intervention data indicated increased student engagement in learning, an improvement of social skills in a cooperative learning setting, and the increased ability to use higher order thinking skills. Eighteen appendices include an engaging behavior checklist, reading placement test raw data, writing evaluation and raw data, and student journal responses. Contains 35 references.) (Author/SD)

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IMPROVING STUDENT ENGAGEMENT

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An Action Research Project Submitted to the Graduate Faculty of the

School of Education in Partial Fulfillment of the

Requirements for the Degree of Master of Arts in Teaching and Leadership

Saint Xavier University & IRI/Skylight

Field-Based Masters Program

Chicago, Illinois

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ABSTRACT

This report describes a program for improving student engagement in the learning process. The targeted population consists of first, third, and fifth grade students in a small, traditional, middle class community, located in central Illinois. Evidence of non-engaged behaviors will be documented from teacher observations, samples of students' work, and anecdotal records.

Probable causes contributing to the problem include societal issues such as social dissolution, amount of money allotted per pupil, and negative student attitudes; and school related issues, including inadequate curriculum, assessment, and teaching strategies.

In order to address the problem, cooperative learning, higher order thinking skills, and multiple intelligences will be addressed through curricular revisions and lesson delivery.

Post intervention data indicated increased student engagement in their learning, an improvement of social skills in a cooperative learning setting, and the increased ability to use higher order thinking skills.

CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

The students in the targeted elementary school (1st, 3rd, and 5th grade) are exhibiting behaviors which suggest they are not engaged in the learning process. These behaviors interfere with academic performance. Evidence for this problem was gathered from teacher observations, samples of student work, and anecdotal records.

The School Setting

The targeted elementary school is a part of a unit district comprised of an elementary school, junior high, and a high school building. The elementary school houses K-5 students and has three classes per grade level. It is a brick one- story building with three wings. The initial building was built in 1968 with the latest addition of six classrooms, a teachers' lounge, and a multipurpose room being added in 1996. There are 24 self-contained classrooms most of which have restrooms; those rooms without bathroom facilities use two centrally located restrooms. Classrooms are also provided for two resource room programs, music, speech, Reading Recovery, and guidance. The new multi-purpōse room can be used as one large room for all school activities or be divided into as many as four large rooms using partitions. Band also meets in this area for the purpose of individual or group instruction. Six storage rooms are located on the perimeter of the multi-purpose room, two of which are used for band instruments. Besides being used for physical education classes, part of

the gym is used as a lunchroom eating area with tables being set up daily at the noon hour. Adjacent to the gym is a kitchen where food is prepared for the hot lunch program. Centrally located, there is a learning center which houses a library and computer lab. The offices of the principal and school secretary are located by the front entrance of the school.

Of the 933 unit district student population, 408 are elementary students. Within this elementary population, 99.5% of the students are White, 0.0% are Black, and 0.5% are Asian. The targeted elementary school has 3.5% of its students coming from low-income families. Only 0.2% of the students have limited English proficiency. The student mobility rate is 8.7%, with attendance being 96.8%. The number of low income students over the past five years has remained relatively stable as has the mobility rate. The school retains few students. Retention, based on developmental readiness, is limited to kindergarten and first grade, a practice consistent with general educational research indicating that retention after first grade proves ineffective and negatively impacts a student's educational progress. Chronic truancy is 0.0% and therefore is not a problem.

Teachers at the targeted elementary school have an average teaching experience of 15.2 years with the average age being 42.6 years. Thirteen teachers have a bachelor's degree and 12 have a master's degree. Seven teachers are in the process of completing a master's program at this time. Of the 25 teachers, the physical education teacher is the only male. Average salaries for the unit district in 1994-1995 were $33,295 for teachers and $56,013 for administrators. The operating expenditure per pupil was $3,814. The elementary school pupil teacher ratio is 21:1 (Tremont, 1995).

School personnel at the targeted elementary school, besides the three teachers per grade level at K-5, includes one physical education teacher, one

vocal music teacher, one speech therapist, two special education teachers, one Reading Recovery teacher, one learning center aide, two teacher aides, and a part-time guidance counselor. In addition, there are two full time custodians, a building principal, and a school secretary .

The targeted elementary school begins the school day at 8:00 a.m. and concludes at 2:50 p.m. Students at this school leave their classroom a total of four hours per week for learning center (library and computer activities), music, and physical education classes.

Within the classroom, the students are exposed to a wide variety of language experiences. Instruction ranges from the use of basal texts, novel units, and author studies. Activities include sustained silent reading, choral reading, cooperative projects, responsive and reflective logs, book talks, classroom discussion, decoding strategies, phonics reinforcement, and spelling.

The Reading Recovery Program is an early intervention reading program in which intensive instruction and support in the development of effective reading strategies is implemented by a 30 minute daily pull out program. Students are placed in this program through screening guidelines established by the Reading Recovery program.

With the adoption of a new math series, the math curriculum encompasses the use of manipulatives, problem solving, and computation skills. Many teachers have been trained in the Math Their Way and Math a Way of Thinking programs which is incorporated into their math instruction.

The science and social studies programs are often integrated across the curriculum. Many methods of instruction are used, including the use of the scientific method and hands on activities. Many teachers use the Aims materials for science instruction, and Nystrom kits for geography instruction.

Three years ago, the targeted school adopted a formal inclusion program in which students with individual education plans were to be placed in one classroom per grade level. Special Education students are placed in these classrooms after a multi-disciplinary conference determines their eligibility. The two resource teachers, one of whom services K-2 students and the other servicing grades 3-5, collaborate with the regular division teacher to meet the needs of all the students.

At this time, the regular division teacher implements the art curriculum without the aid of a specialized art instructor. Presently, the identified gifted students are not involved in a formal, gifted program. Teachers attempt to address the needs of those students within the classroom. The speech teacher not only pulls students out for individual instruction, but also works with teachers in the collaborative classrooms. The guidance counselor is available for individual sessions on a referral or as-needs basis, as well as presenting group activities within the classroom. Optional extra-curricular activities include a vocal group called the Master Singers, beginning band instruction, and a choral reading group. These activities are available for the 4th and 5th graders.

The Surrounding Community

The targeted community is a traditional, somewhat conservative town made up of primarily middle-and upper-middle class families. It has a small-town atmosphere, strong civic involvement, and an emphasis on the family. The community is characterized by a strong sense of "hometown" pride. The total population of the community/district is 4,578 people. The population breakdown shows that 98.56% are White, 0% Black, and 1.11% Hispanic. There are 4.19% who are living in poverty. The median housing value is $66,325. Over

ninety percent (91.9%) of the population has graduated from high school, with 24% graduating from college, and 5.6% having done post graduate work.

There is strong church involvement in the community. Two large Apostolic Christian churches, a Baptist church, and a Methodist church are located within the city limits and have large memberships.

The community has a desirable geographic location for those who desire to escape the urban setting and is highly accessible to larger cities. This community is centrally located between Peoria, Pekin, and Bloomington/Normal. With good highway access to these areas, many residents commute to Diamond Star Motors, State Farm Insurance, or Caterpillar for employment. The area is much less dependent on Caterpillar than it was in the early 1980's. The community has recently shown signs of expansion in the local economy.

Figure 1 indicates that almost thirty-eight percent (37.9%) of the people in the community were classified as native-born residents. An overwhelming number of people, who are heads of the household, are between the ages of 35-54, as shown in Figure 2. The population consists of mostly married members with few being widowed, divorced, or single which is indicated in Figure 3.

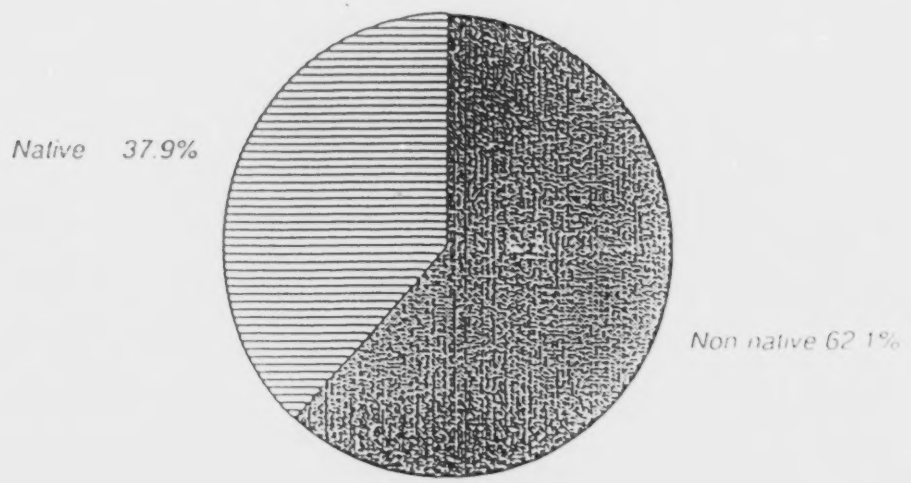

Figure 1. Native and Non-Native Population Breakdown

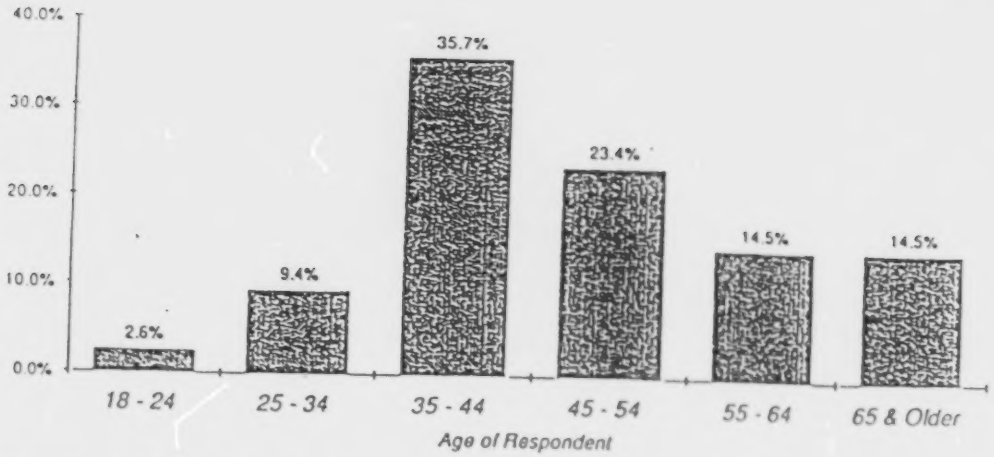

Figure 2. Age Distribution Heads of Households

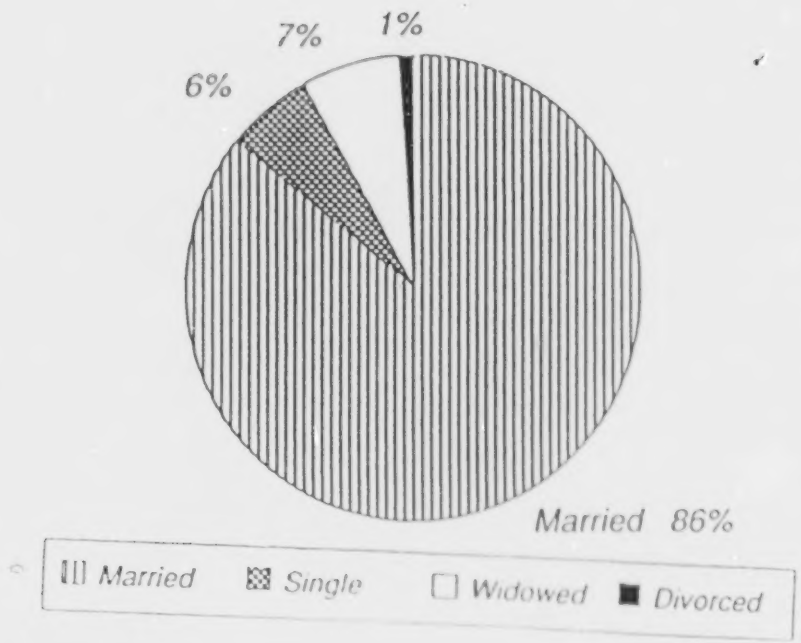

Figure 3. Marital Status of Respondents

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The targeted community has one unit school district serving a 68 square mile area. There is a principal at the grade school, junior high, and high school, and also a district superintendent. The school district is perceived by those wishing to relocate as excellent, with low student to teacher ratios. The elementary school has a strong parent volunteer program. Approximately 40 parents assist the staff and students on a weekly basis. Their assistance comes in many forms such as, working with small groups of students, clerical help, putting up and taking down bulletin boards and displays.

One group in the community that is actively promoting development and business climate is the Commerce Association. It is a group of about 50 local businessmen who feel there is a need for planned growth in the targeted area.

The Zoning board, seven appointed members of the community, in joint effort with the school board, recently expressed an interest in beginning to plan and promote future development. There are two factors that negatively impact the growth of the community. First, there is a desperate need for additional housing with limited rental property or multi-family dwelling units. Second, there is also a lack of available land for future development since much of the land surrounding the village is used for agricultural purposes.

Besides having two community parks maintained by the park district, a small lake has recently been opened to the public for fishing. For recreational activities, there are softball, baseball and super softball leagues. In addition to a swim team, swimming lessons are offered at the community pool.

Every summer, the first full weekend in June, there is a community wide festival that raises approximately $40,000. This money is disbursed to various organizations within the community. The festival is totally operated by volunteers.

The Lion's Club, Kiwaniis, Commerce Association, Garden Club, Masonic Lodge, and a Women's Club are active organizations in the community. A community building is available for public use.

National Context of the Problem

Educators have defined underachievement as performance that is significantly below the student's measured or demonstrated potential for academic achievement. This discrepancy is judged either by grades or achievement test scores, or both. Gowan, as cited by Whitmore, suggested underachievement be defined as performance that places the student more than a full standard deviation below his ability standing in the same group (Whitmore, 1980).

It has been suggested by researchers, that there are different kinds of underachievement, or different criteria, by which the underachievers' condition may be described. They have classified underachievers in terms of the duration of the problem, and how it became known. It can also be classified by describing the effects of the underachievement on the individual and others (Whitmore, 1980).

Underachievers often demonstrate distinct behavioral syndromes. They may be aggressive, withdrawn, or vacillate between aggression and withdrawal. These children often perceive themselves as failures and have low self-esteem. They feel unable to meet the expectations of their parents and teachers. They tend to blame the school, or more often, themselves. Negative attitudes towards school and classmates may be created which then leads to disruptive behaviors at home. Parents often view the child as being stubborn and not wanting to try harder to do better. Parents confirm that children often exhibit angry outbursts, tears, and sibling rivalry (Whitmore 1980).

Teachers frequently perceive the underachiever as having immature social and emotional behavior, lacking intellectual drive, being less productive than other classmates, tending to "waste time" and not follow directions, being unmotivated and impatient with details, and disliking routines. The fact that a child is underachieving is often concealed by the natural tendency of teachers to focus more on the child's behavior problems (Johnson and Johnson, 1987).

It has been shown through research that sometimes educators themselves interfere in the academic achievement by assigning students to a special class, when "these policies and practices may actually create many of the problems they are intended to alleviate" (Jones & Pierce, 1992, p. 70). All students should have an equal opportunity for a quality education.

The professional literature often attributes underachievement to family problems. Sometimes behavior problems stem from dissolution of the traditional family, where contact time between parents and child is an average of 15 minutes per day (McCabe & Rhoades, 1992). Also, inappropriate role models viewed on television, and unclear societal values and morals all contribute to the child's inability to achieve to his/her highest potential (Bellanca, 1992).

Studies have shown that self esteem and attitudes toward school are basically developed during the early primary years. Students who are under-achievers in grade school are often found to be underachievers in high school and college indicating that once a pattern of underachievement has been established, it often continues and becomes worse. For under-achievers, "the eventual outcome too frequently is delinquency, school dropouts, and mental illness" (Whitmore, 1980, p. 194).

Chapter 2

Problem Documentation

Problem Evidence

In order to document the extent to which students are not engaged in their learning, teacher observations, samples of student work, and anecdotal records were gathered over a five month period of time.

There were 92 students from four different classrooms involved in this process from September 1996 through January 1997. Engaging behavior was monitored by assessing cooperative groups with a Likert scale (Appendix A), using engaging behavior checklists (Appendix B), administering a reading placement test (Appendix C), utilizing authentic assessments of writing (Appendix E), and assessing student journal responses (Appendix G).

A Likert Scale was developed to assess student collaboration in cooperative groups. A summary of the observed behavior during cooperative group work is presented in Table 1.

Table 1

Observed behavior during cooperative group work during Sept. 1996 (Grades 1,3,5)

Behavior Category	Number of Groups	Percent of Groups
Engaged Behavior	7	32
Somewhat Engaged Behavior	11	50
Not Engaged Behavior	4	18

As the data in Table 1 indicate, half of the twenty-two groups (50%) were somewhat engaged in the cooperative activity. Thirty-two percent of the students were engaged in this group activity. Fewest (18%) were not engaged in the activity. Engaged behaviors are defined as staying on task, contributing to the group and group interaction. It can be concluded that two-thirds of the students are not fully engaged in their learning during cooperative group work. This information is further illustrated in Figure 4.

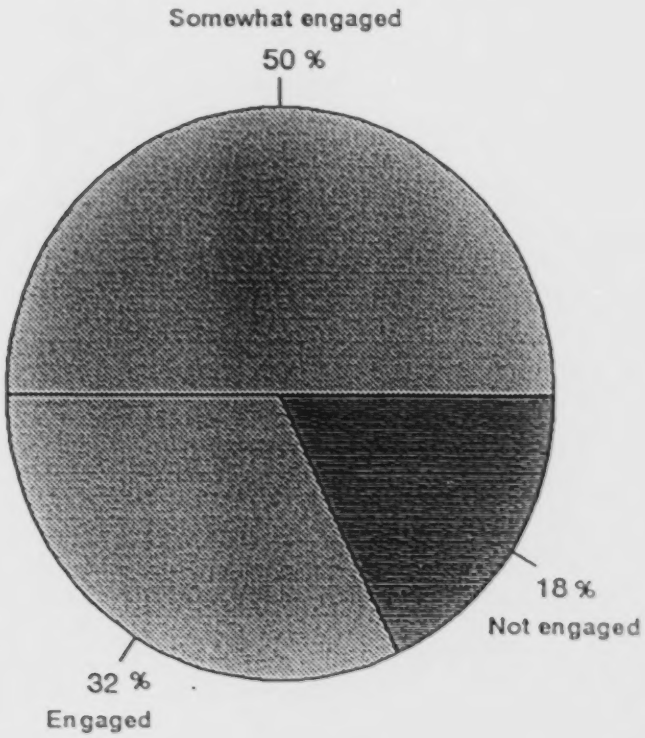

Figure 4. Engaged behaviors during cooperative group work, September 1996.

A Checklist was developed to document specific student behaviors during daily activities.

Table 2

Engaging Behavior Checklist during Sept. 1996 (Grades 1,3,5)

	Makes acadmec. contrib. related to topic	follows direct. verbal/ written	asks or responds to releated questions	applies knowledge to other areas	no response
1st grade A	5	14	3	4	6
1st grade B	9	8	7	6	8
3rd grade	10	12	16	7	7
5th Grade	10	15	11	3	4

As the data in Table 2 indicate, a little over one-third of the 92 students are making academic contributions. Slightly over one-half of the students follow verbal or written directions while 60% of students are not responding to or asking questions. Older students (grades 3 and 5) appear more willing to ask or respond in class. Teachers noted that applying knowledge, which is one of the higher order thinking skills, is the most difficult behavior to observe. It was interesting to note that 27% of the students did not exhibit any of the engaging behaviors observed. This information is further illustrated in Figure 5

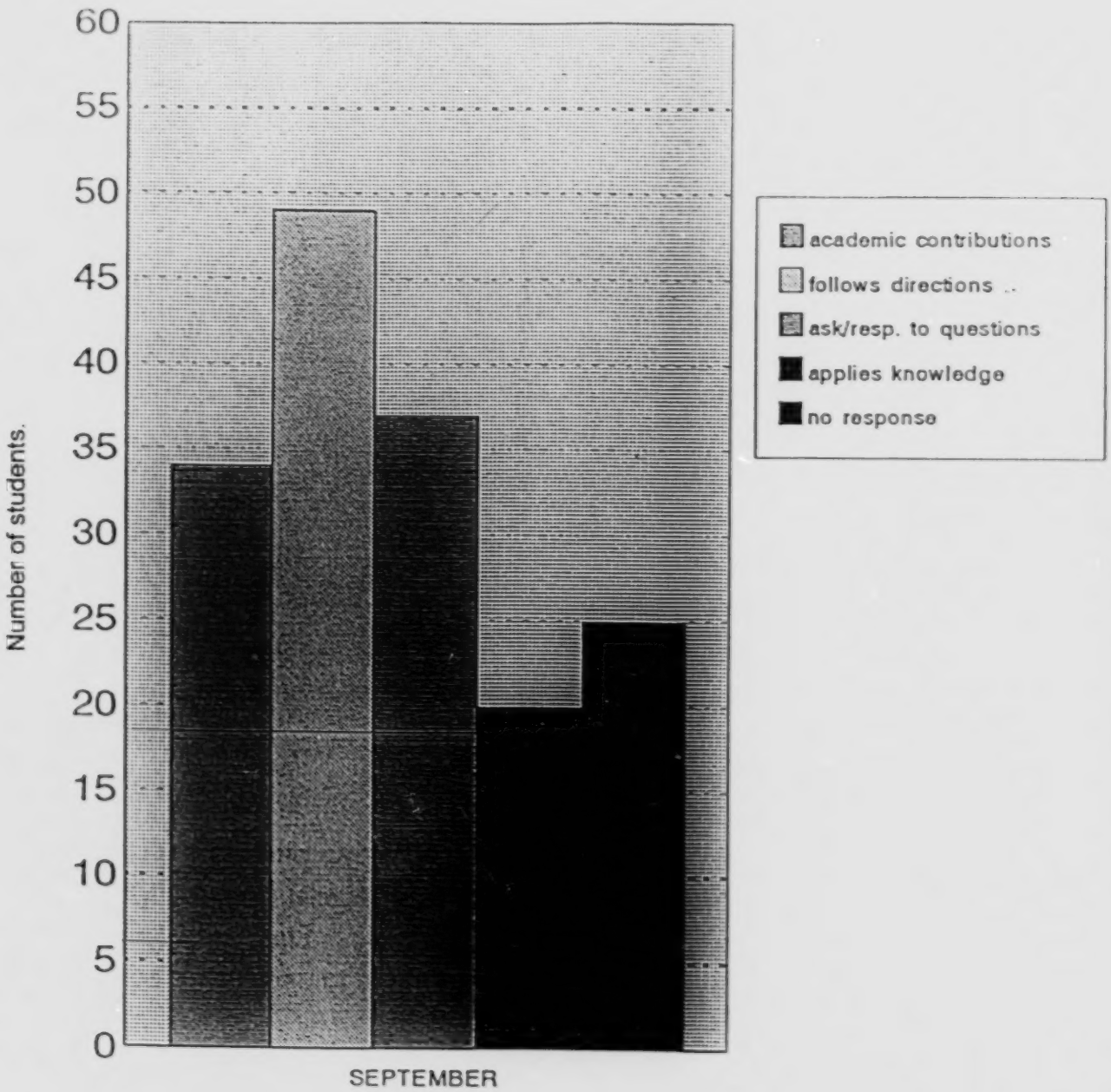

Figure 5. Categories and frequencies of engaging behaviors that were observed in September 1996.

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Both teachers, A&B, did a writing evaluation with their classes as indicated in Figure 6. The teachers evaluated these samples for mastery of writing mechanics.

As the data in the Writing Evaluations Figures 6 and 7 indicate, none of the students used all 11 of the writing skills the teachers were looking for. Approximately 90% of Teacher A's twenty-one students and 61% of Teacher B's 18 students demonstrated the ability to use 3-5 of the writing skills being evaluated by the teachers. The most common skills being used were capital letters, ending marks, and words emerging to form complete sentences. At this time, 10% of Teacher A's students and 28% of Teacher B's students appear to be at-risk, scoring in the 0-2 range. Only 11% of the students are presently using 6-8 of the writing skills.

Teacher A's sampling was completed during the third week of September, while the students from Teacher B's class completed theirs the first week of school. It may be of interest to note that there are two students with IEP's in Teacher B's class. These data are also reflected in Figures 8 and 9.

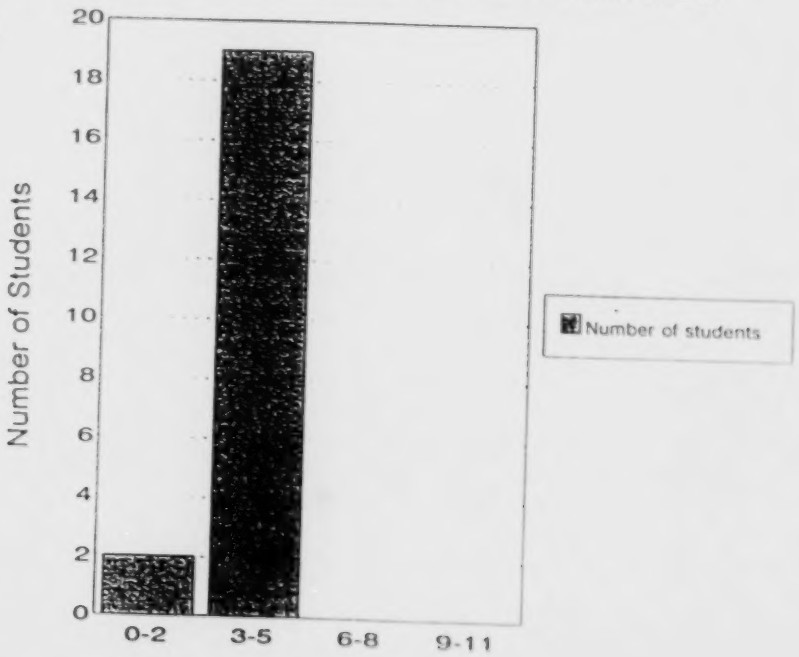

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Figure 6. Teacher A. Number of writing skills demonstrated.

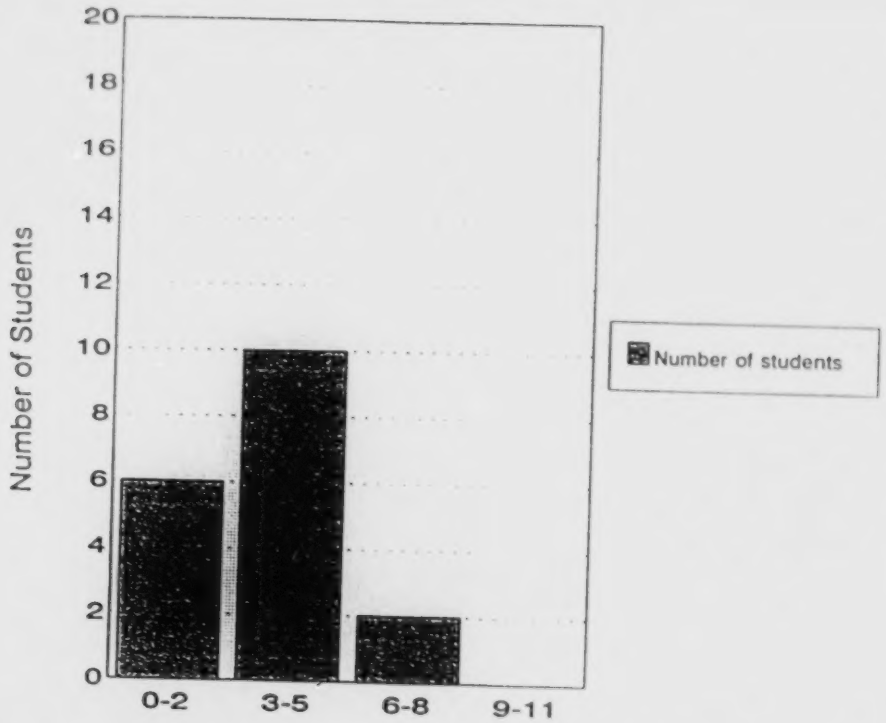

Figure 7. Teacher B. Number of writing skills demonstrated.

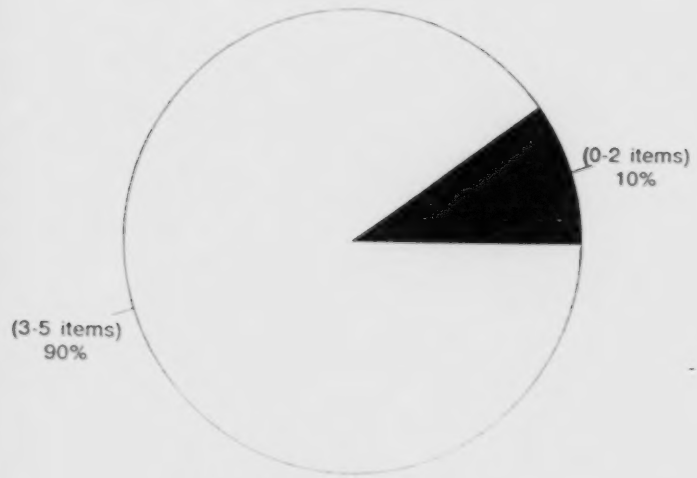

Figure 8. Teacher A.
% of students and # of
writing skills demonstrated.

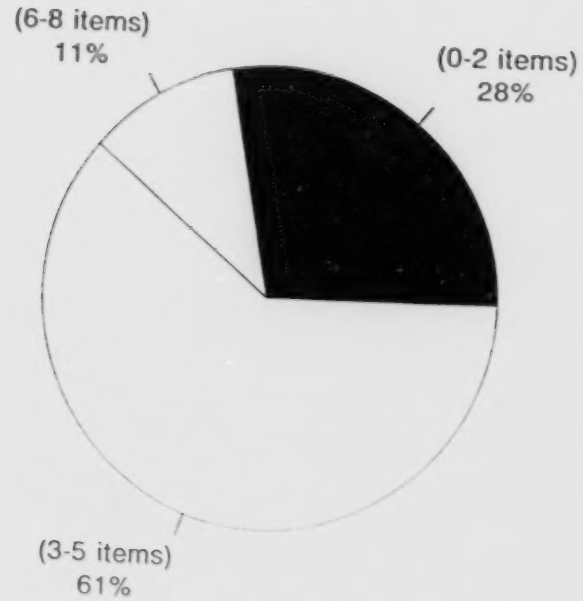

Figure 9. Teacher B.
% of students and # of
writing skills demonstrated.

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Both third and fifth grade teachers administered a reading placement test to determine the current reading levels of their students.

Table 3

Third Grade Reading Placement Pretest Taken September of 1996

	Number of Students	Percentage of Students	Percentage of answers correct at the designated level
Above Estimated Instructional Level	5	19	70
At Estimated Instructional Level	12	46	64
Below Estimated Instructional Level	9	35	72

As the data in Table 3 indicate, 19% of the students were performing above the estimated instruction level for third grade according to the Silver Burdett and Ginn Placement Test Manual in the areas of comprehension and vocabulary. Close to half (46%) were at the estimated instructional level for third grade. The table also indicates 35% were performing below third grade instructional levels.

The average percentage score by the "above estimated instructional level" students was 70%. The "at estimated instructional level" students scored an average of 64% percent. The "below estimated instructional level" students scored a 72% average. The total number of students "at or above estimated instructional level" is 17 out of 26 total students (65%). These data suggest that at this time well over the majority of the students have a strong base for instruction.

Table 4

Fifth Grade Reading Placement Pretest taken September of 1996

	Number of Students	Percentage of Students	Percentage of answers correct at the designated level
Above Estimated Instructional Level	18	67	92
At Estimated Instructional Level	7	26	81
Below Estimated Instructional Level	2	7	83

As the data in Table 4 indicate, well over half of the students were performing above the estimated instructional level for 5th grade in the areas of reading comprehension and vocabulary according to the Silver Burdett & Ginn Placement Test Manual. Twenty-six percent of the students were at the estimated instructional level for 5th grade. The fewest students were performing below 5th grade estimated instructional level.

The average percentage score by the "above estimated instructional level" students was a high 92%. The "at estimated instructional level" students scored an average of 81%. The "below estimated instructional level" students scored high at 83%. Twenty-five out of twenty-seven students are performing at or above the estimated instructional level (93%).

Probable Causes

Why are students not engaged in their learning? Is it because teachers have not given students the tools necessary to become engaged learners? Students need to be more engaged in their learning process, schools need to be interesting, while students need to believe what they are learning is interesting and valuable. The lack of parental support hinders the foundation a child needs to be successful in school. The literature suggests these as being probable causes (Steinberg, 1996).

While the public becomes increasingly concerned about the education their children are receiving, the nature of the problem doesn't necessarily lie solely with school related issues, but with societal issues as well.

One probable cause for the disengaged student may be that while the world has changed, schools have not. There has been little change in the classroom from the mid 19th century, but the world around us has changed greatly. Just look outside the four walls of the school and see how the computer has created an information explosion, shrunk the globe, and changed how most people do their jobs. Schools have not taken into account that the tool for the 21st century is the mind. The best workers will need to think creatively and critically, to make decisions, and to solve problems. We no longer need to train the majority of students to work on an assembly-line or prepare them for the isolated work force. Today, workers are required to use critical skills for collaborative conflict resolution and teamwork. Our schools have not been keeping up with the ever-changing world (Bellanca, 1992).

Our society has also been considered the "me" society. Students come to school with the attitude of "What are you going to do for me?" instead of taking on the responsibility of learning themselves.

More and more schools and teachers are taking on the role of the "primary caregiver for the children of an increasingly stretched and stressed adult population" (Harris, 1992). Schools today are a place for children to go when their parents work as well as a place they go to learn.

At the heart of the problem of student failure, disinterest and apathy is not the failure of the students, but the failure of the teachers. When learning doesn't occur, there may be a problem in the learning environment rather than in the student. "Quality teaching is measured by the quality of learning" (Harris, 1992). All children can and want to learn. When children enter the system with interest and enthusiasm, there is a need to ensure that the students will keep that, not squelch it.

The "complexities of integrating cooperative learning, thinking, curricular areas, and technology require a financial commitment, time allocation, and a support system that go beyond" what most districts provide for their teachers (Bellanca,1992).

Therefore some teachers resist new methodologies to get students actively involved in their learning, simply because of their lack of training to teach in these new ways. Also, since their current practices seem to be working, there is little incentive to experiment with the new teaching methods.

In some of the most recent reform movements, the topic of teaching methods has been pretty much ignored. " If we really want to change student achievement in American schools, we must act directly upon teaching and learning" (Daniels, Hyde, and Zemelman, 1993, p.3).

With the changes in a fast paced society, an increasing number of students are coming to school with little knowledge of how to behave socially, let alone ready for learning.

Studies have shown that a students' self-perception impacts their ability to engage in metacognitive behavior (Winograd and Gaskin, 1992). If the students lack self-esteem and self confidence, the task is doomed before even being attempted. A positive attitude is vital to academic and non-academic success.

Teachers are reluctant to give the students more power, choices, and responsibility concerning their learning. Many teachers complain of the lack of time to allow for choices. Teachers also argue that students should not be allowed to make curriculum choices. According to Mamchur, the problem becomes a power struggle. With this lack of student involvement in learning, there is the lack of motivation and effort.

Another probable cause for students not being engaged may reside outside the school. Most psychologists agree that the source of influence critically important to student success is the family. Today children are coming to school from single-parent, dual working parents, no-parent, and even homeless family settings. The definition of the traditional family has changed from what we used to know. These parents have less time to spend with their children for proper supervision, and the children are coming to school with fewer basic social skills (Bellanca, 1992).

To fill this void of family, often the television is flipped on, or the child may sit and play computer games. Elementary children spend fifteen times more hours watching television as talking with their fathers (Kagen, 1992). Today's society has also become fascinated with

television shows and films which the lead characters are admired for being anti-intellectual, or just plain stupid. For instance, the popular shows such as "The Simpsons" and "Beavis and Butt-head" have such lead characters. Our society has glorified stupidity. Never before have we had so many characters like these being role models for young people. These shows have made being intelligent and engaged in learning undesirable (Steinberg, 1996).

Specific messages about schooling and learning are communicated to children by their parents. Some children learn lessons from their parents that actually undermine the commitment to learning and achievement that our schools strive for.

When parents do not take advantage of opportunities to attend school functions or to help their child, they send the message that although they feel school is important, they don't have the time to be involved in it.

The way a child is treated in general affects the child's ability to become engaged in school. Some styles of parenting actually interfere with healthy school engagement. Researchers such as Steinberg and Brown agree that when parents are more rejecting than accepting, more lenient than firm, and don't let children express their individuality, children do not develop to their potential.

Effective parenting takes time, and when parent's time or energy is limited due to work commitments, stress, financial difficulty, or psychological problems, good parenting becomes difficult.

Many parents are not concerned about or involved in their children's lives. Problems associated with these disengaged parents are evident today. Adolescents from these homes show psychological

immaturity and adjustment difficulties. They are less interested in and less successful in school. As Laurence Steinberg (1992) states, "nearly one in three parents is disengaged from their adolescent's life."

Within the targeted school district, there has been a shift in population which could be one of the probable causes for the disengagement of students. The ill effects of society as a whole have filtered into our small town community.

While parent involvement is encouraged, there seems to be extremes at both ends. Some parents are not available and are disinterested in their children's education, while others are overly involved and question every curricular decision made by the professional staff.

With the average age of the targeted school staff being 42.6 years of age, and having learned the instructional methods of the 70's, many teachers are leery of current trends or lack the knowledge and training necessary for effective teaching. Limited funds for training and materials hinders teachers in their ability to engage students.

Students come to us with low self-esteem and act out in inappropriate ways. They exhibit a "me" attitude; "what will you do for me?", instead of taking on the responsibility for their learning. There is a need to address these probable causes.

Unless these barriers to effective teaching and learning are overcome, it will remain difficult to engage students in the learning process.

CHAPTER 3

THE SOLUTION STRATEGY

Literature Review

Today, students are exhibiting behaviors which suggest they are not engaged in the learning process. These behaviors interfere with academic performance. Probable causes contributing to the problem include societal as well as curricular issues.

Even though many reforms have created innovations in the classrooms, many students are still performing below average and are not engaged in the learning process. According to a national study of high school students by Steinberg, Brown, and Dornbusch (1996), the greatest influences on students' achievement are their peers and parents. The research was based on identifying factors in the students' lives that allow them to become engaged in the learning process. Engagement was described as a "two way street" --schools need to be interesting, but students need to be willing and able to be interested. Many researchers today have ignored the fact that students need to be "engagable." The sole responsibility should not be on the school to be engaging (Steinberg,1996).

Somehow during the past quarter of a century, students have become alienated from school. Society and children once made school a

high priority and viewed it as a way to get ahead in life. Now many students don't see the value in school and don't relate it to becoming successful. Many Americans have not become less intelligent, but less interested in school than they were in previous generations.

Understanding the way in which ability and engagement affect student's performance leads to solutions. Intelligence can obviously play a role in influencing achievement, but research has focused too much on that one aspect and not on the noncognitive influences. "No amount of cognitive ability will result in actual achievement if the requisite emotional characteristics that contribute to interest in school are not present" (Steinberg,1996,p.64). Engagement is a prerequisite to learning.

In order to get students engaged in the learning process, they must believe that what they are learning is either interesting and/or valuable. They must have a sense that what they are doing is worthwhile and holds value. They also must believe that as a result of being engaged and putting forth effort, they will acquire some bit of useful knowledge, learn an important skill, or grow in some way (Steinberg, 1996). Students must believe that school is a worthy investment and effort in school is necessary for academic achievement. In addition to that belief, they must also believe that they have some control over how well they do in school; that their performance is some how related to their effort.

How do we motivate students to work hard? Steinberg suggests that teachers must raise the minimum standards and expectations in schools. Educators need genuine consequences for students who fail to meet the expectations. Raising the standards will not be beneficial if the consequences have not be addressed.

The second recommendation is to change the parameter of success. Presently, only a small minority of students have the incentive to perform at an exceptional level in order to seek admission to selective colleges and universities. The majority of the students perform at a mediocre level in high school and yet still are offered admission into colleges since institutions of higher education are eager to fill their classrooms. One option to change the parameters of success is to raise college entrance requirements so that college admission is not guaranteed to students simply because they have completed high school.

The third option is to try to alter the ways in which students are motivated. Teachers should find ways to change students' beliefs and attitudes so that they are not motivated by negative consequences such as failing to graduate, but for the sheer success of excelling academically. Parents, peers, and society's attitudes and beliefs will need to be changed as well.

Parenting can either foster student engagement or hinder it. This issue will be dicussed briefly since this is an outside factor that cannot be controlled by the teacher. However, the topic of parenting styles is a real and important issue when looking at children being engageable.

Research by Steinberg (1996), has shown that there are fundamental dimensions of parenting that differentiate good parenting skills from poor ones. Children who are successful in school are found to have parents who are accepting rather than rejecting, firm and not lenient, and who display autonomy versus control. Most parents fall somewhere between the two extremes of each range. Parents must lay the foundation for children in order for them to be successful in school. Children must feel loved, valued, and supported by their parents. Parents

must set expectations for their children and consequences for not meeting those expectations. Lastly, parents who show respect for their child's opinions and encourage their child's individuality, will raise a child who will speak up for what he or she believes.

To understand how to actively involve students in their learning, educators may need to employ the strategies of cooperative learning, teach the skills of higher order thinking, and help students develop their multiple intelligences (Johnson & Johnson, 1992).

When one thinks of how to engage students in the classroom, cooperative learning is a key strategy. Cooperative learning refers to instructional teaching methods that include cooperative student-to-student interaction about subject matter as an integral part of the learning process (Kagan,1992). In cooperative learning, teachers foster a safe place for individuals to present differing viewpoints, while also learning critical thinking skills and problem solving. This instructional strategy is a way in which personal and social responsibility can be further developed (McCabe & Rhoades, 1992).

Cooperative learning is not a new concept. It is as old as humankind (Johnson, Johnson, Holubec, & Roy,1984). Historically, working cooperatively with a common purpose, has lead to successful human endeavors. Humans are very intelligent; yet, to live alone in a jungle or forest, man would not survive for long. Individuals do not live on an island alone. In fact, humans depend daily on cooperation in modern society. It is very difficult to think of many activities where cooperation is not needed. Human society is made of cooperative groups: families, neighbors, churches, civic organizations, political groups, and athletic teams (Slavin,1989).

Over the past twenty years, studies have consistently shown that students who work together toward a common goal produce higher achievement and greater productivity than students who work alone. This teaching strategy also results in higher-level reasoning, more frequent generation of new ideas, and increase transfer of knowledge from one situation to another than does competitive or individualistic learning. Cooperative learning has been shown to improve self-esteem and psychological health (Johnson & Johnson,1992). "Research shows that cooperative learning is the single best strategy for increasing achievement of all students, particularly underachievers" (American Online: Guest Active Learning; Students Feel They're in Charge,1996). Another strategy used in engaging students in the learning process is the use of high-order thinking skills.

"To empower students as thinkers: there can be no greater teacher's gift" (Seldin,1992,p.1). Students should be taught to take charge of their own minds. In the thinking classroom, the emphasis shifts from a content/product orientation to a problem-solving process approach. Students need to be actively engaged in making connections during the learning process. In classrooms where teachers embrace the concepts of active learning, students do the real work of learning and discovery for themselves. The teaching of higher order thinking skills is emerging as a powerful movement to engage students in their learning. "Thinking skills are the tools of good thinkers" (Willis,1992,p.41). Direct teaching of thinking skills leads to "metacognition, the conscious awareness of how thinking is done" (Brenna,1995,p.30). Examples of higher order thinking skills are the ability to analyze, hypothesize, infer, question, generalize, and evaluate.

Given a risk free environment, students are allowed "to explore their own values and to construct their own rationales for engaging in various types of thinking" (Huffman, Huntley-Johnston & Spires,1995, p.115). Virtually all advocates of the critical thinking movement agree that the teacher is vital to creating an environment where critical thinking is encouraged and valued. This classroom climate has been described as a spirit of inquiry by Glatthorn and Baron and as classroom thoughtfulness by Newman (Seldin,1992). There is a learning focus, not a teaching focus. There is a belief that "all kids can learn, that learning is an active process, that literacy involves thinking and meaning making, and that knowledge evolves" (Bellanca & Fogarty,1993,p.86). Children acquire knowledge through inquiry. Experimentation and risk taking are valued and making mistakes is a part of growing and learning.

What does this classroom look like? In a critical thinking classroom, the teacher encourages the students to ask more thoughtful and reflective questions. Often, the answer to a question become less important than the inquiry process itself. Teachers also ask students to clarify answers, and in doing so, the students are pressed to think more deeply and broadly about their response. In these classroom, teachers and students engage in "real" talk, where students and teachers share their views in class discussions, and the teachers model their reasoning process. There is more student and less teacher talk. There is more questioning by students and teachers alike. Students talk about their thinking and reflection on what they have learned. Short term and long term projects, significant reading, purposeful writing, and applied math will be seen.

Teachers need to select appropriate materials and reflective tasks to actively engage students in their learning. It has been said that teachers now need to focus on a fourth "R"--how to reason. (Young,1992). As Gore states, we want students not only to have the necessary basic skills, but also the ability to think. We want students to become intellectually, self-confident learners who will make learning a life-long habit. (Gore,1991). We need to provide a classroom environment where students think about their thinking and their learning. Children need "experience in examining situations, exchanging ideas, and generating alternatives in preparation for the many unknowns of their tomorrows" (Bellanca & Fogarty,1993,P.8).

Critical thinking is vital for students today. If they are to become productive problem solvers and mindful decision makers, their minds need to be able to analyze, compare, and judge data. By comparing, contrasting, classifying, sequencing, prioritizing, drawing conclusions, and evaluating, they can demonstrate their ability to think critically; a requirement for economic and social survival.

A third strategy to engage students in their learning is to incorporate the use of multiple intelligences into instructional activities. Psychologists have always been interested in intelligence. Back in 1934, John Dewey discussed the necessary role of intelligence in his book Art as Experience. Over half a century ago, Spraner wrote Types of Men focusing on the ways in which people function and see the world. Thirty years ago, psychologists Morris I. Stein and Shirley Heinze addressed the nature of creativity (Eisner,1994).

Today, Howard Gardner's name is synonymous with research relating to intelligence. Gardner, a professor and researcher at the

Harvard Graduate School of Education and author of many books including Frames of Mind: The Theory of Multiple Intelligences has constructed the theory of multiple intelligences. Gardner's work is important because he has provided significant leads for other researchers to pursue in developing a more equitable approach to education. Gardner recognized that people differ in their ability to solve problems in different areas of life Gardner stated (1993):

> If you want to learn to think critically, you must learn to think critically in different disciplines. Schools should try to educate for understanding, which means having a sufficient grasp of concepts, principles, or skills which can be used to bear upon new problems and situations. Knowing how kids learn is the key. (p.23)

Gardner is trying to get schools to recognize a range of intelligences and then change the educational practices to promote children's multiple intelligences. Most schooling doesn't empower students to act on their intelligences. He believes schools should nurture children's interests and abilities giving them enrichment and learning opportunities (Black,1994). Gardner's theory of multiple intelligences maintains that every individual possesses seven intelligences, but in varying degrees of strength. The seven intelligences are: verbal-linguistic, logical-mathematical, musical, spatial, body-kinesthetic, interpersonal, and intrapersonal. Because each person has a unique intellectual profile with preferred methods of approaching and solving problems, a standardized approach to education may inevitably neglect some students. Schools are typically organized around two of the different intelligences--verbal-linguistic, and logical-mathematical.

High-level work in a field usually requires more than one form of intelligence (White, Blythe, & Gardner,1992).

Research and the theory of multiple intelligences has resulted in changes and modifications in education. Now some schools are redesigning their curriculum so all children can learn and succeed through their strengths in the particular intelligences. While this does not mean that each lesson must have all seven different options or that all seven intelligences must be represented equally throughout the curriculum, it does mean that teachers need to consider all of these intelligences in planning instruction and assessment. Children learn best when they use their strengths, so they need opportunities to use all of these intelligences throughout the day. Using multiple intelligences can help teachers look for new ways to relate curriculum to their students (Hoerr,1994).

Key School in Indianapolis was one of the first schools to implement the theory of multiple intelligences. By broadening school curriculum, it enabled students to pursue various paths toward their understanding. Key School students learn about multiple intelligences in their regular classes. Then they draw on their experiences to create three major projects each year. Students learn the "basic skills" required, but do so through multiple paths that take advantage of their personal and creative energies. Therefore, students take some responsibility for shaping their school experience and learn to use their own strengths to better meet and serve the demands of the school (White et al.,1992).

Another project, the Practical Intelligence For School (PIFS) developed curriculum materials to help students take more responsibility for their learning. The curriculum is based upon three kinds of

knowledge: managing oneself, managing tasks, and working with others. In teaching about self-management, students learn about multiple intelligences and individual styles of thinking. PIFS lessons and curriculum gives students opportunities to recognize that they have unique ways, as the multiple intelligences theory contends, of going about their schoolwork and establishing workable solutions to the problems they face daily (Sternberg, Okagaki, Jackson,1990).

Project Spectrum was developed as a model enabling very young children to explore various intelligences and interests. Students visit "learning centers" where they can choose from a variety of hands-on activities that allow them to experiment with materials in each domain. Parents receive a Spectrum Report at the end of the year outlining the child's intellectual profile and suggesting home/school activities intended to foster growth (Smerechansky-Metzger,1995). Students are more likely to enjoy their work and are more motivated when they are encouraged to develop their strengths.

Another model program is the Early Childhood Gifted Model Program at Montgomery Knolls. This program has changed the way teachers perceive and discuss children. The identification of each child's strengths and the need to provide appropriate nurturing problem settings for children with different strengths resulted in the way they plan and provide programs for children. The program created a new role for teachers, also. They have become teacher-researchers seeking clues to find the best learning environment for each child (Liebowitz & Starnes, 1993). Since we have different capacities at different ages, curriculum needs to be developed to teach students the full spectrum of intelligence skills in ways and at times that are appropriate to developmental stages of

their growth. David Lazear, in his book Seven Ways of Knowing, has listed various skills for each of the intelligences that need to be taught and used by students at different stages of their development. The more students are aware of their different ways of knowing allows them to become more adept beyond the classroom (Lazear,1992).

Since an educational goal is to prepare children for a productive adult life, teachers have an obligation to help students develop all of their intelligences and then capitalize on their skills needed in later life (White et al.,1992). "By chunking the broad range of human activities into seven intelligences, we now have a map for making sense out of the many ways in which children learn, and a blueprint for ensuring their success in school and in life" (Armstrong, 1994, 37).

When educators have a better understanding of how to actively involve students in their learning by using the strategies of cooperative learning, teaching higher order thinking, and developing multiple intelligences, students will be empowered to become more fully engaged in the learning process.

Project Objectives and Processes

As a result of altered teaching strategies during the 5 month period of September of 1996 to January of 1997, the students in the targeted classrooms (1st, 3rd, and 5th) will increase their engagement in the learning process as measured by behavior checklists, anecdotal records, teacher journals, and the assessment of students' academic work.

In order to accomplish the terminal objective, the following processes are necessary:

1. A series of learning activities and materials that address higher-order thinking skills will be implemented.
2. A series of learning activities that address multiple intelligences will be implemented.
3. A series of activities that address cooperative learning will be implemented.

Project Action Plan

Weeks 1,2,3,4

Introduce the concept of working in groups (base and task) and address the social skills of using 6" voices, listening to your neighbor, staying with the group, looking at the speaker, and not hurting anyone's feelings.

Groups will be formed based on:

1. Mixed gender; academically diverse
2. Task and base groups
3. Temperament
4. Size: 2 - 5 members
5. Formal instruction (weekly)
6. Guided practice in task groups (on going)

Activities:

1. T-Chart explaining what cooperative learning looks like and sounds like.

Multiple Intelligences: verbal/linguistic, visual/spatial, intrapersonal

Higher Order Thinking Skills: Primary - describing
Secondary - classifying, evaluating

2. "We Bags"

Multiple Intelligences: verbal/linguistic, intrapersonal, interpersonal, bodily/kinesthetic

Higher Order Thinking Skills: Primary - describing
Secondary - telling, explaining, inferring

Activities (cont.)

3. What's Your Role?

MI: interpersonal, verbal/linguistic

HOTS: Primary - explaining

Secondary - recalling, if/then

4. Think - Pair- Share

MI: verbal/linguistic, intrapersonal, interpersonal

HOTS: Primary - explaining

Secondary - describing, synthesizing

Introduce the creative thinking skill of brainstorming.

Activities:

1. Working in base groups, the students will brainstorm similarities among group members.

MI: bodily/ kinesthetic, verbal/linguistic, interpersonal

HOTS: Primary - brainstorming

Secondary - listing, comparing

2. Each teacher will implement the use of a brainstorming activity related to her unit of study by using an attribute web.

MI: visual/spatial

HOTS: Primary - brainstorming

1st graders - The students will work on a whole group attribute web listing characteristics about dogs.

3rd graders - The students will work in base groups and complete an attribute web by brainstorming words that have to do with weather. The students will use the book, Cloudy with a Chance of Meatballs as a reference.

5th graders - The students will be given an attribute web with Judd Travers, a character from Shiloh, in the middle. Together, as a class, they will brainstorm attributes for Judd Travers and place them around the web.

Weeks 5,6,7

Introduce the creative thinking skill of predicting.

Activities:

1. Each teacher researcher will have students work with a partner to complete the cooperative activity "Call It."

MI: verbal/linguistic, bodily/kinesthetic, logical/mathematics

HOTS: Primary - predicting

Secondary - estimating, counting, explaining, transferring

2. Each teacher researcher will implement the use of predicting with the activity "Prediction Pairs."

MI: visual/spatial, verbal/linguistic, interpersonal

HOTS: Primary - predicting

Secondary - reasoning, if/then, problem solving

1st graders - The students will predict what will happen next in the text using the story: Bingo the Naughty Dog or Clifford and the Grouchy Neighbors.

3rd graders - Using the story, The Wind and the Sun, the prediction pair will take turns reading and recording what they both agree will happen next and their reason for thinking the way they do.

5th graders - After reading aloud a chapter from Summer of the Monkeys, the students will be asked to work with a partner to complete the activity called Prediction Pairs. They will predict what will happen next in the story and the reasoning behind their predictions. The students will fill in their predictions on the chart.

Weeks 8,9,10

Introduce the creative thinking skill of visualizing.

Activities:

1. Each teacher researcher will use the activity "Story on a Rope," modified for her own class.

MI: visual/spatial, verbal/linguistic, intrapersonal

HOTS: Primary - visualizing

Secondary - analyzing, decision making

2. Each teacher researcher will implement the creative thinking skill of visualizing related to her unit of study.

MI: visual/spatial, bodily/kinesthetic

HOTS: Primary - visualizing

Secondary -

1st graders - As a group, students will create-a-creature based on a previous unit of study about dogs and cats.

3rd graders -The students will visualize themselves with their family living on the Kapiti Plain as Ki-pat did in the

story. With their partner they will discuss and list the ways their life would be different. The students will also use the book Bringing the Rain to Kapiti Plain as a reference.

5th graders - Upon finishing the book Shiloh, the students will be asked to pick a certain scene from the book and draw a picture to recreate the scene.

Weeks 11, 12,13

Introduce the critical thinking skill of evaluating.

Activities:

1. Each teacher researcher will use the activity "Mrs. Potter's Questions" modified for her class.

MI: intrapersonal, verbal/linguistic, visual/spatial

HOTS: Primary - evaluating

Secondary - judging, explaining, analyzing, describing

2. Each teacher researcher will implement the process of evaluating by introducing the use of journal stems and reflective journals/logs.

MI: visual/spatial, verbal/linguistic, intrapersonal

HOTS: Primary - evaluating

Secondary - reasoning and explaining

1st graders -The students will complete journal stems/logs related to the study of November/Thanksgiving.

3rd graders - While doing a Pilgrim simulation unit, the base groups will be responsible for completing a journal/log of

their journey across the Atlantic to the time of the Thanksgiving Feast.

5th graders - Students will be asked to fill out a journal stem/log related to the study of the Early Settlers.

Weeks 14,15,16

Introduce the creative thinking skill of problem solving.

Activities:

1. Teach the steps of problem solving using "Picture Problems."

MI: visual/spatial, verbal/linguistic, interpersonal

HOTS: Primary - problem solving

Secondary - reasoning, predicting, speculating

2. Each teacher researcher will implement problem solving skills by using the activity "Problem of the Week."

MI: bodily/kinesthetic, logical/mathematical, visual/spatial

HOTS: Primary - problem solving

Secondary - reasoning, explaining, speculating, telling

Weeks 17,18,19

Introduce the critical thinking skill of sequencing.

Activities:

1. Teach the steps of sequencing using the sequential thinking model and activity "Peanut Butter and Jelly Sandwich."

MI: verbal/linguistic, logical/mathematical, bodily/kinesthetic

HOTS: Primary - sequencing

Secondary - recalling, sorting, analyzing

2. Each teacher researcher will implement sequencing related to their unit of study.

MI: musical/rhythmic, visual/spatial

HOTS: Primary - Sequencing

Secondary - recalling, sorting, analyzing

1st graders - The students will be studying Polar Bears and will construct an individual sequencing booklet to support the story Polar Bear Leaps.

3rd graders - After completion of reading the book Stone Fox, the children will follow the graphic outline of the sequential thinking model that asks them to state the problem in the story and to solve the problem sequentially.

5th graders - The students will choose one book and create a strip of pictures to retell the story. The strip of paper will be divided into 9 sections. Three sections will retell the beginning of the story, 3 sections will picture the middle of the story, and the last three sections will picture the end events of the story. Each section will be sequenced according to the events in the story.

Methods of Assessment

In order to assess the effects of the interventions, a Likert Scale was developed to assess student collaboration in cooperative groups. Also developed was an engaging behavior checklist to document specific behaviors such as academic contributions and the ability to apply knowledge across the curriculum. A rubric to assess student journal responses was another tool developed for assessment. A writing evaluation checklist was created to assess the mechanics of writing at the first grade level. At the third and fifth grade levels, the Silver Burdett and Ginn Placement Test was the tool for evaluation.

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of this project was to engage students in their learning process. The implementation of activities and materials that address cooperative learning, higher-order thinking skills, and multiple intelligences, were selected to accomplish this task. Cooperative learning was used to teach social skills and was also employed as an instructional technique to integrate higher order thinking skills and multiple intelligences in daily instruction.

As stated in the action plan, the first four weeks were devoted to direct instruction of social skills, which included staying with your group, including everyone, sharing your ideas, staying on task, encouraging everyone to contribute, and using six inch voices. Each class was divided into base groups of four to five students of mixed gender and academically diverse. One method used to promote social skills was an activity using a T-Chart. (Appendix H) The students discussed and recorded their ideas stating what cooperative learning looks like and sounds like. Another activity introduced in the first four weeks was a lesson titled "We Bags." (Appendix I) For this activity, the students were provided with a white paper bag which they designed and filled with two or three items that represented their personality. To further prepare students to be accountable for the whole group's work, and to assess the group's performance, the activity "What's Your Role" used cards that varied according to the age of the students, enabling them to practice their roles in a cooperative group

setting. (Appendix J) A rehearsal strategy called "Think-Pair-Share" was taught as a means to stimulate students to think about a topic, concept, or an important piece of information. (Appendix K) All students shared their information with a partner; therefore, students were accountable for their thinking. In establishing the foundation of the social skills for cooperative group work, activities integrating the higher order thinking skills of describing, classifying, evaluating, telling, explaining, inferring, recalling, and synthesizing were addressed. The verbal/linguistic, visual/spatial, intrapersonal, interpersonal, and bodily/kinesthetic multiple intelligences were implemented throughout the social skills instruction.

In addition to the social skills instruction, the creative thinking skill of brainstorming was introduced. Working in base groups, the students brainstormed similarities among group members. Later each teacher researcher implemented the use of a brainstorming activity related to their unit of study by completing an attribute web. (Appendix L) An attribute web is a graphic organizer which allows students to organize their thoughts visually. The higher order thinking skill of brainstorming, as well as listing and comparing, was integrated within these activities. The multiple intelligences of bodily/kinesthetic, verbal/linguistic, interpersonal, and visual/spatial were used in this creative thinking skill.

During the next three week period, the creative thinking skill of predicting was introduced. At each grade level the students worked with a partner to complete the cooperative activity "Call It." (Appendix M) The students worked in pairs taking turns recording and predicting heads or tails as they flipped a coin. The recorder tallied the predictions and would circle the tally mark if the prediction was correct. Each teacher researcher also implemented the skill of predicting with an activity called "Prediction Pairs." (Appendix N) All students

used a story within their curriculum to predict and record what would happen next in the story and the reasons behind their predictions. As well as predicting, the higher order thinking skills of estimating, counting, explaining, transferring, reasoning, and solving were employed. The multiple intelligences targeted included verbal/linguistic, bodily/kinesthetic, logical/mathematics, visual/spatial, and interpersonal.

During weeks eight, nine, and ten of the action plan, the creative thinking skill of visualizing was utilized. Each teacher researcher modified the activity "Story on a Rope" for her own use. (Appendix O) This activity allowed students to sequentially represent sections or chapters of a story through a visual display. Also during this time period, each teacher researcher implemented the creative thinking skill of visualization relating to her unit of study. Along with visualizing, the higher order thinking skills of analyzing and decision making were practiced. Visual/spatial, verbal/linguistic, intrapersonal, and bodily/kinesthetic are the multiple intelligences that were drawn upon by the use of these activities.

The following three weeks, were designed to address the critical thinking skill of evaluation. Each teacher researcher used the activity "Mrs. Potter's Questions", which was modified for her class. (Appendix P) These questions, which are referred to in the appendix, were used after a project or activity to assist the students in the process of self reflection. Each teacher researcher also implemented the process of evaluation by introducing the use of journal stems and reflective journals/logs. Students completed these entries as a means of response to their unit of study. The critical thinking skill of evaluating, in conjunction with judging, explaining, analyzing, describing, and reasoning were practiced throughout these activities. The three multiple intelligences emphasized were verbal/linguistic, visual/spatial and intrapersonal.

The activities of weeks 14, 15, and 16 dealt with the creative thinking skill of problem solving. In teaching the steps of problem solving, problematic situations were portrayed on illustrated picture cards to pairs of students. In the activity "Picture Problems," students were instructed to brainstorm possible solutions to the problem presented. An illustration depicting these situations is located in Appendix Q. Each teacher researcher also implemented problem solving skills by using the activity "Problem of the Week." In doing so, the teachers presented a problem to the class for the students to solve cooperatively, either in pairs or groups. Reasoning, predicting, speculating, explaining, and telling, were secondary to the primary skill of problem solving. The multiple intelligences, visual/spatial, verbal/linguistic, bodily/kinesthetic, logical/mathematical, and interpersonal were integrated in the activities.

The final three weeks were devoted to introducing the critical thinking skill of sequencing. The activity "Peanut Butter and Jelly Sandwich" was used as a sequential thinking model. The students discussed the process of making a sandwich, paying close attention to the sequential steps. Once again, each teacher researcher implemented the process of sequencing within her unit of study. A sample of a fifth grade sequential activity called "Book Summary" can be found in Appendix R. The higher order thinking skills of recalling, sorting, and analyzing were utilized as well as the primary skill of sequencing while the multiple intelligences of verbal/linguistic, logical/ mathematical, bodily/kinesthetic, and musical/rhythmic were addressed.

Presentation and Analysis of Results

Using a Likert scale, teachers noted student behavior while they were engaged in cooperative group work. Engaged behaviors are defined as staying on task, contributing to the group, and group interaction. These data were collected periodically and are reflected in Table 5.

Table 5

Observed behavior during cooperative group work during Sept. and Nov. 1996 and Jan. 1997. (Grades 1,3,5)

Behavior Category	# of groups			% of groups		
	Sept.	Nov.	Jan.	Sept.	Nov.	Jan.
Engaged Behavior	7	10	13	32	45	59
Somewhat Engaged Behavior	11	12	8	50	55	36
Not Engaged Behavior	4	0	1	18	0	5

N=22

Using the Likert scale that was developed to assess student behavior during cooperative group work, the teacher researchers noted that overall, the students' behavior continually improved during the five month period from Sept. 1996 to Jan. 1997. The percentage of groups displaying engaged behavior increased by 27%. When combining groups of "engaged" and "somewhat engaged" categories, in Sept., 18 of the 22 cooperative groups (82%) were demonstrating engaged behaviors while at the end of the intervention period 95% were demonstrating some engaged behavior. The percentage of students not engaged in the targeted behavior fell from 18% to 5%.

On a checklist, teachers recored specific student behaviors which indicated student engagement in the liearning process. These data, which were collected at various dates throughout the intervention, are reflected in Table 6

Table 6

# of Engaged Behaviors during the months of Sept. and Nov. 1996 and Jan. 1997 (Grades 1,3,5)

	Makes academ. contrib. related to topic			follows direct. verbal/written			asks or responds to related questions			applies knowledge to other areas			no response		
	Sept.	Nov.	Jan.	Sept.	Nov.	Jan.	Sept.	Nov.	Jan.	Sept.	Nov.	Jan.	Sept.	Nov.	Jan.
1st grade A	5	8	11	14	15	18	3	6	8	4	6	8	6	5	3
1st grade B	9	12	13	8	8	12	7	18	15	6	3	6	8	0	1
3rd grade	10	23	23	12	18	19	16	22	19	7	20	21	7	2	1
5th grade	10	11	7	15	12	21	11	8	13	3	11	15	4	6	2
Total # of incidences	34		54	49		70	37		55	20		50	25		7

As the data in Table 6 indicate, a notable improvement in all areas of engaged behavior was made. Of the 92 students in Sept. 1996 and the 91 students in Jan. 1997, the total number of noted instances of "makes academe. contrib." increased from 34 to 54 instances (22%). The teacher researchers tallied 49 marks of the desired engaged behaviors of "follows direct. " in Sept. In Jan. 1997, the teacher researchers tallied 70 marks which indicated an increase of 18%. Another engaged behavior, "asks or responds to related questions" showed a marked increased from 37 to 55 incidences or 35%. There were 20 incidences in Sept. where "applies knowledge to other areas" was noted. In Jan. there was an increase of 43% which means that 50 incidences were tallied. The number of times that "no response" was observed changed from 25 incidences in Sept to 7 in Jan. This was a desirable result.

Teachers A and B collected writing samples from their students, which were completed during the intervention period. These examples were evaluated for mastery of writing mechanics, as reflected in Figures 10 through 13. The scale reflects possible scores ranging from 0 through 11. Teacher researchers felt that a score of 9 to 11 was excellent while a score of 0 to 2 was poor.

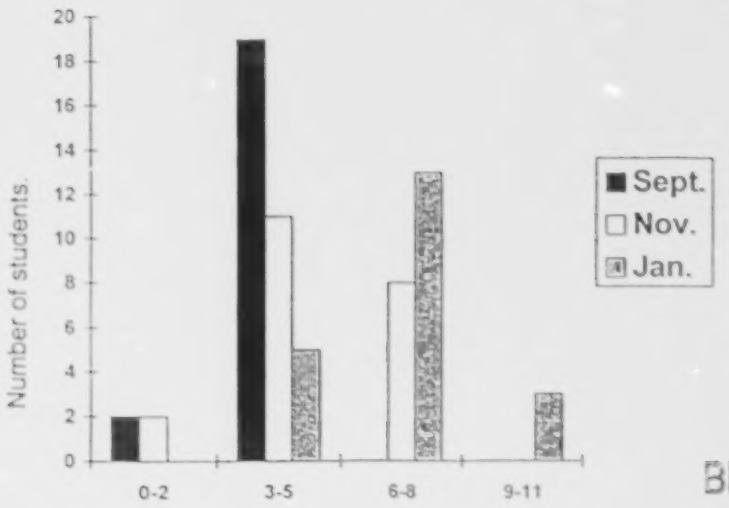

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Figure 10. Teacher A. Scores of items correct on writing sample.

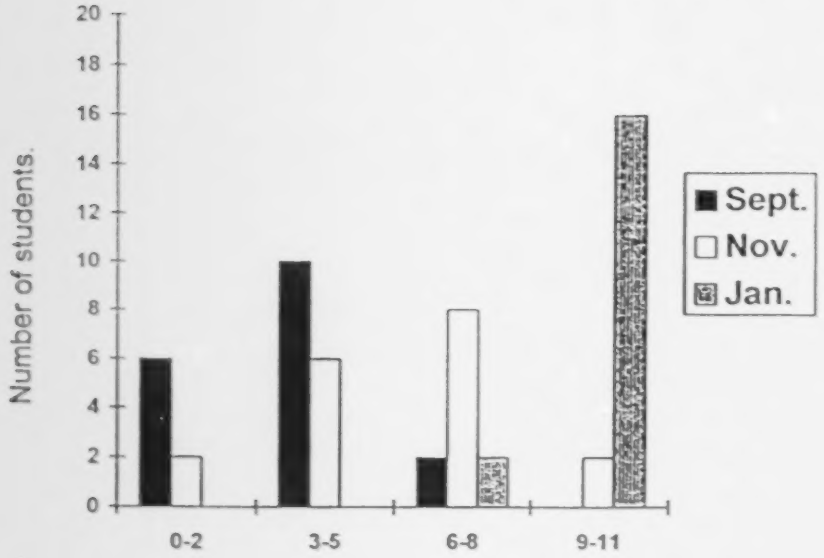

Figure 11. Teacher B. Number of writing skills demonstrated.

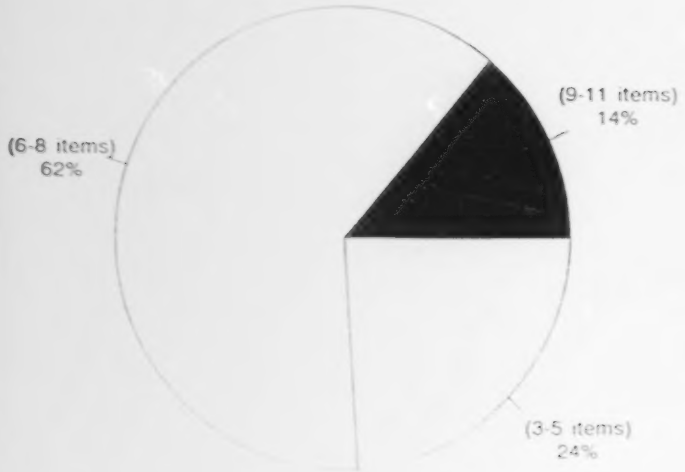

Figure 12. Teacher A.
% of students and # of writing skills demonstrated in Jan. 1997

Figure 13. Teacher B.
% of students and # of writing skills demonstrated in Jan. 1997

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As the data in Figure 10 indicate, the students in Teacher A's class improved in the ability to use the targeted writing skills. These skills ranged from being as elementary as ending punctuation and capitals to using consonant blends and diagraphs in words, sequential story telling and paragraph writing. Initially there were no students demonstrating more than 5 of the 11 writing skills, while in Jan. there were 16 out of the 21 students (76%) who were using 6 or more of the writing skills.

As the data in Figure 11 indicate, the students in Teacher B's class demonstrated a marked improvement in their ability to use writing skills being evaluated by the teacher. While none of the 18 students used 9-11 writing skills initially, the evaluation of the third sampling indicated that as many as 89% of the class, or 16 of the 18 students were using 9-11 of the targeted writing skills. Also at the time of the third sampling, all students from Teacher B's class were using 6 or more of the desired writing skills in their writing.

In order to assess the growth in reading for third grade, a pretest (Sept. 1996) and posttest (Jan. 1997) was given using the Silver Burdett and Ginn Placement Test. This test assessed areas of comprehension and vocabulary. These data are presented in Table 7.

Table 7

Third Grade Reading Placement Pretest (Sept. 1996) and Post Test (Jan. 1997)

	# of students		% of students		% of ans. correct at desig. level	
	Sept.	Jan.	Sept.	Jan.	Sept.	Jan.
Above Estimated Instructional Level	5	10	19	38	70	85
At Estimated Instructional Level	12	13	46	50	64	69
Below Estimated Instsructional Level	9	3	35	12	72	47

N=26

As the table indicates, 19% of the students tested at the above estimated level in January. Fifty percent of the students scored at the estimated instructional level. The table also indicates 12% were performing below the third grade instructional level. The table also shows that 88% tested at the instructional level or above in January versus 65% in September. Thirty-five percent scored below estimated instructional level in September compared to the score of 12% in January.

The average percentage of correct answers scored by the students in the "above estimated instructional level" was 85% in January compared to 70% in September, which shows an overall increase of 15%. The average percentage of answers correct scored by the students in the "at estimated instructional level" was 69% in January. This was an increase of 5% over the five month period.

The data also indicated that the percentage of correct answers at the below estimated instructional level dropped from 72% in September to 47% in January. This percentage reflected a decline of 25%. These three students may need additional interventions in order to succeed.

The total number of students at or above estimated instructional level rose from 17 in September to 23 in January. The table shows that the number of students below the estimated instructional level went from nine in September to three in January.

In order to assess the growth in reading for fifth grade a pretest (Sept. 1996) and posttest (Jan. 1997) was given using the Silver Burdett and Ginn Placement Test. This test assessed areas of comprehension and vocabulary. The data are presented in Table 8.

Table 8

Fifth Grade Reading Placement Pretest (Sept. 1996) and Post Test (Jan. 1997)

	# of students		% of students		% of ans. correct at desig. level	
	Sept.	Jan.	Sept.	Jan.	Sept.	Jan.
Above Estimated Instructional Level	18	24	67	92	92	85
At Estimated Instructional Level	7	2	26	8	81	54
Below Estimated Instsructional Level	2	0	7	0	83	0

Sept. N=27
Jan. N=26

The table indicates an increase of 25% in the number of students who tested in January at the above estimated instructional level. Eight percent of the students scored at the estimated instructional level. The table also indicates none of the students were performing below the fifth grade instructional level. The table also shows that 100% tested at the instructional level or above in January versus 93% in September. Seven percent scored below estimated instructional level compared to the score of 0% in January.

The average percentage of answers correct scored by the students in the above estimated instructional level was 85% in January compared to 92% in September which shows a decrease of 7%. The at instructional level students scored an average of 54% in January compared to 81% in September. This was a decrease of 27%.

The total number of students at or above the estimated instructional level rose from 18 in September to 24 in January. The table shows that the number of students below the estimated instructional level went from 2 in September to 0 in January.

In order to assess the student's growth of reflection in journal responses, evaluations were made for grades 1,3, and 5 during fall of 1996 and winter of 1997. The data are presented in Table 9.

Table 9

Journal response evaluations during Fall 1996 and Winter 1997 (Grades 1,3,5)

Criterion	# of students		% of students	
	Fall	Winter	Fall	Winter
No sign of reflection	28	13	31	14
Some sign of reflection	50	42	56	47
Definite sign of refection	12	35	13	39

As the table indicates, in the fall of 1996, 31% of the students showed no sign of reflection while only 14% of the students fell in this category in the winter, which is a 17% overall improvement. Fifty-six percent of the students demonstrated some sign of reflection in the fall. In the winter, the students demonstrated a decrease to 47% in the area of some sign of reflection. A low 13% of the students showed definite signs of reflection in the fall while a high 39% of the students scored in the area of definite reflection in the winter. This was an improvement of 26% of the students showing definite signs of reflection.

Sixty-two students (69%) scored in the combined categories of some and definite signs of reflection in the fall. The combined score rose in the winter to a high of 77 students (86%) in the same combined two areas.

Conclusions and Recommendations

Based on the presentation and analysis of the data, students exhibited marked improvement in being engaged in their learning. The Likert Scale used to assess desired behavior during cooperative group work reflected the positive effect the intervention had on the students. The Engaging Behavior Checklist also indicated the students overall improvement in their active participation in learning. It was interesting to observe the ability of students to apply and transfer the acquired knowledge to other areas of learning. At the same time, the teacher researchers felt that this particular area was the most difficult to document due to the subjective nature of the behavior. The skills that were targeted in the action plan and internalized by the students influenced students' abilities in the academic areas of writing as well as reading. First grade students showed progress in their ability to demonstrate writing skills targeted by the teacher researchers. It appears that the data from the placement tests given to the third and fifth grade students, indicate significant strides in the areas of vocabulary and comprehension. The students also proved to be more reflective

when writing journal responses, which indicated the ability to use higher order thinking skills. The teacher researchers felt that the direct instruction of social skills for cooperative group work during the first four weeks of the action plan contributed to the overall success of the intervention.

After careful consideration, the teacher researchers believe several recommendations should be addressed. The reliability of the engaged behavior checklist was questionable due to the difficulty in tallying observed behaviors as they occurred. At times, it was cumbersome for the teacher researchers to be consistent and document all the behaviors being displayed by students while at the same time, presenting a lesson. It is recommended by the teacher researchers that an outside observer assist in the documentation of behaviors. Furthermore the action plan should be followed sequentially to ensure that the social skills are in place, prior to the teaching of higher order thinking skills and employing multiple intelligence activities. In this way, students are given a strong foundation of cooperative learning skills so the groups can be used as a means to further enhance student engagement. All teachers involved felt, that as a result of the intervention, students were empowered to become more active participants in the learning process.

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Appendices

Appendix A

Likert Scale

Name_____ Date_____

COOPERATIVE GROUP WORK

Criterion: Collaboration in Cooperative Groups

1_____2_____3

Indicators:

-Little interaction	-Some interaction	-Enthusiastic interaction
-Conversations not always on topic	-Conversations usually focused on topic	-Involved conversation on topic
-One person dominates	-Two people are involved	-Whole group contributes
-Several students are off task	-One student is off task	-All students are on task

Comments:

Appendix B

Engaging Behavior Checklist

ENGAGING BEHAVIOR CHECKLIST

TEACHER _____

WEEK OF _____

NAME	MAKES ACADEMIC CONTRIBUTIONS RELATED TO TOPIC	FOLLOWS DIRECTIONS VERBAL/ WRITTEN	ASKS OR RESPONDS TO RELATED QUESTIONS	APPLIES KNOWLEDGE TO OTHER AREAS VERBAL OR WRITTEN
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				

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Appendix C

Reading Placement Test

Silver Burdett and Ginn Inc.

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Appendix D

Raw Data

READING PLACEMENT TEST

Student	% Correct		Est. Instruct. Level	
	Pretest	Postest	Pretest	Posttest
1	20%	47%	below	below
2	80%	67%	below	at
3	70%	53%	below	below
4	70%	60%	below	at
5	80%	40%	below	below
6	60%	60%	below	at
7	80%	67%	below	at
8	60%	87%	below	at
9	80%	60%	below	at
10	73%	100%	at	above
11	80%	100%	at	above
12	67%	73%	at	at
13	60%	73%	at	above
14	53%	80%	at	at
15	80%	73%	at	at
16	80%	80%	at	above
17	73%	67%	at	at
18	47%	93%	at	above
19	27%	67%	at	at
20	60%	67%	at	at

Appendix D cont.

READING PLACEMENT TEST

21	67%	73%	at	at
22	53%	73%	above	above
23	73%	60%	above	above
24	87%	100%	above	above
25	67%	87%	above	above
26	73%	87%	above	above
27	80%	67%	above	above
28	73%	87%	at	above
29	80%	80%	at	above
30	93%	80%	below	above
31	100%	100%	above	above
32	87%	93%	at	above
33	100%	100%	at	above
34	93%	87%	above	above
35	93%	100%	above	above
36	93%	93%	above	above
37	100%	100%	above	above
38	87%	93%	above	above
39	80%	47%	at	at
40	73%	60%	below	at
41	93%	93%	above	above

Appendix D Cont.

READING PLACEMENT TEST

42	93%	100%	above	above
43	93%	100%	above	above
44	80%	87%	above	above
45	93%	87%	above	above
46	93%	93%	above	above
47	60%	100%	at	above
48	80%	87%	above	above
49	87%	93%	at	above
50	100%	93%	above	above
51	87%	(moved)	above	(moved)
52	100%	100%	above	above
53	100%	93%	above	above

Appendix E

Writing Assessment

WRITING EVALUATION

_____Initial, some middle and final consonants with vowels.

_____Words emerging.

_____Uses repetitive sentence patterns.

_____Complete sentences emerging.

_____Capital letters used.

_____Periods and question marks used.

_____Consonant blends used in words.

_____Digraphs emerging.

_____Some vowel patterns emerging.

_____Storytelling - sequencing of related ideas emerging

_____Ideas expressed in paragraphs

Comments

N.A. - not appropriate (for this sample)

Appendix F

Raw Data

WRITING EVALUATION

Students	1st Evaluation	2nd Evaluation	3rd Evaluation
1	0	6	7
2	0	5	6
3	3	7	9
4	5	6	7
5	3	6	5
6	4	5	5
7	4	8	9
8	4	3	8
9	5	6	9
10	5	4	7
11	4	5	7
12	4	6	5
13	3	2	5
14	5	5	5
15	4	4	7
16	3	5	8
17	5	5	8
18	4	7	8
19	4	5	6
20	3	7	7

Appendix F Cont.

WRITING EVALUATION

21	3	5	6
22	2	6	11
23	6	7	11
24	6	8	11
25	4	5	11
26	5	8	11
27	5	7	11
28	0	2	10
29	5	9	9
30	1	5	10
31	4	5	6
32	0	2	6
33	5	6	9
34	4	7	11
35	0	3	9
36	4	5	9
37	5	9	11
38	4	6	11
39	0	5	10

Appendix G

Student Journal Response

Name_____ Date_____

JOURNAL RESPONSE

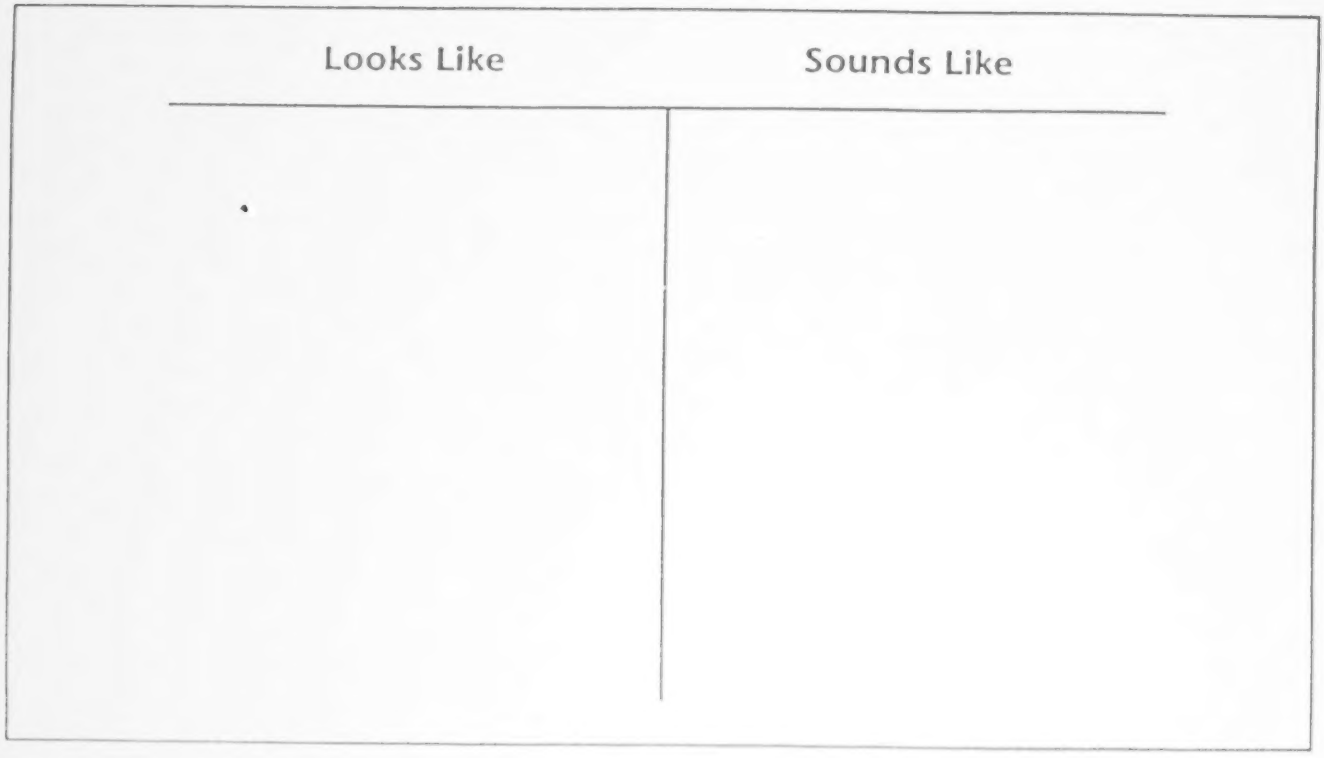
Criterion:
1. response only
2. response supported by specific examples
3. response supported by examples and personal reflections

1	2	3
Shows no sign of reflection	Shows some sign of reflection	Definite signs of reflection (is thinking about learning)
Comments:		

Appendix H

T-Chart

T-CHART
Thinking Skill: Visualizing



Appendix I

"We Bags"

Activities: We Bags

Skills Addressed: Primary, describe; Secondary, tell explain, infer

Explanation/Grade level:

This is a good introductory activity for students at the beginning of the year. I gave each of my first grade students a white paper sack for them to decorate with their names, favorite foods, books or places they had visited-whatever had special meaning to them. Then I had them take the bags home and bring back three things that would fit into the bag, that they could show to the class that would help us know them a little better. I have each child the opportunity to share their bags, one at a time, in front of the class.

Appendix J

"What's Your Role"

Activities: What's Your Role?

Skills Addressed: Primary, explain; Secondary, recall, if/then

Explanation/Grade Level:

With the implementation of cooperative groups as a part of our action plan in first grade, it was necessary for the students to understand that roles are an important key to successful teamwork. I had four role cards for each base group-a reader, a recorder, a materials manager and a checker. I explained each of the roles and then had a volunteer role-play each role as if they were in a group. We then did a cooperative group activity in which the class each had a role to play and let them decide within the group who would be responsible for each job.

Appendix K

"Think-Pair-Share"

Activity: Think-Pair-Share

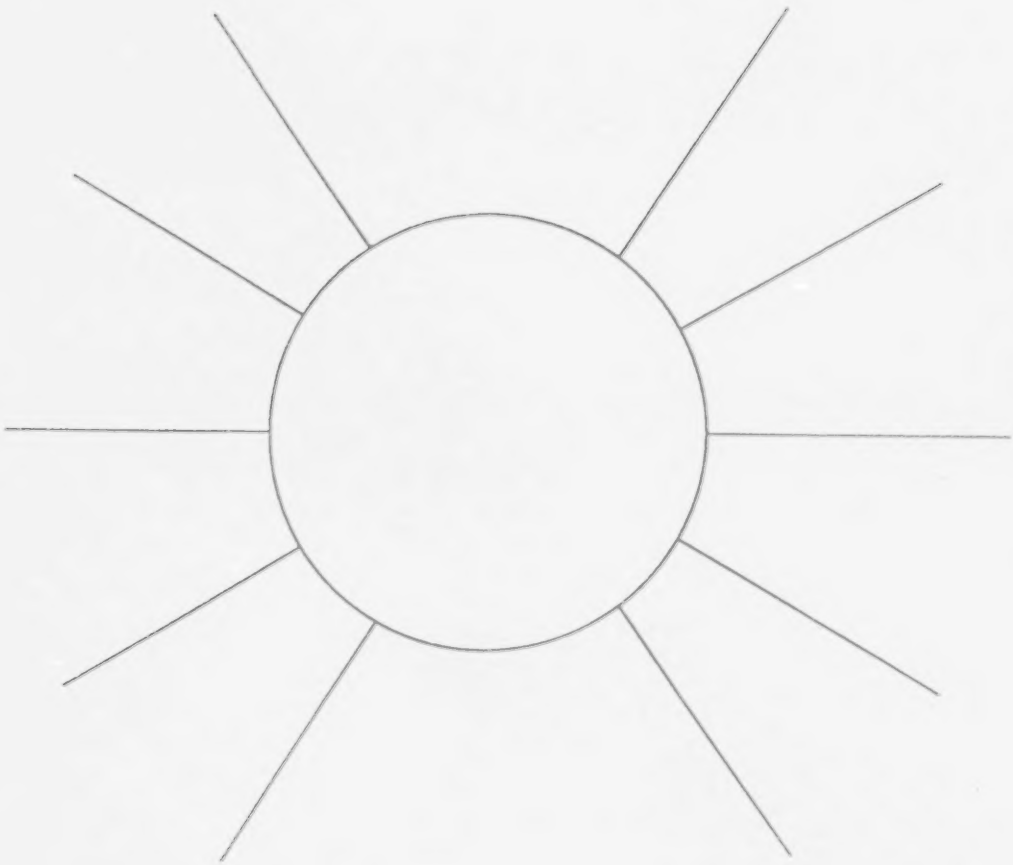
Skills Addressed: Primary, explain; Secondary, describe, synthesize

Explanation/Grade Level:

As a means of determining prior knowledge, a time-saving method is to have students think-pair-share their background information. Students are given a topic or concept to individually think about for a short time. Then they are paired with a partner. (I have them sit face-to-face with partner knees touching.) After they have shared their thoughts for a few minutes, I call on one of the pair members to share their discussion with the class. The students really enjoy doing this, and it eliminates having only a few students give answers and instead draws responses from half the class. I find this works extremely well when used to complete an attribute web. Think-Pair-Share is also an effective means of culminating a unit of study by having partners review what they have learned.

Appendix L

Attribute Web



WEB

Thinking Skill: Analyzing Attributes

Appendix M

"Call It"

Activity: Call It

Skills Addressed: Primary, predict; Secondary, estimate, count, explain, transfer

Explanation/Grade Level:

This activity can be done in a short amount of time with minimal materials. When the first graders began learning about money, we used big magnetic paper coins to show both sides of the coin. Once they understood about heads and tails, we played Call It. Students worked in pairs, with one partner being the recorder and one being the coin flipper. The recorder had a pencil and a paper titled Heads and Tails; the flipper had a penny. The flipper would predict whether the coin would land on heads or tails; then the recorder would mark a tally under the predicted heading. After the flip, the recorder would circle the tally mark if the prediction was correct. The coin flipper predicted and flipped five times; then the roles were reversed. The recorder summarized the prediction by writing 1/5 or 3/5. We used pennies initially, then tried the activity again when we introduced dime, nickels, and quarters.

Appendix N

"Prediction Pairs"

Activity: Prediction Pairs

Skills Addressed: Primary, visual/spatial, verbal/linguistic, interpersonal

Secondary, reason, if/then, solve

Explanation/Grade Level:

In the third grade class, the students were paired off with the person who sat beside them. After reading four pages of the short story, "The Wind and the Sun", the pair was directed to stop and discuss what they thought would happen next. The assigned recorder would then write down the predictions both partners agree to and then write down the reasons for that prediction. Last, one pair would share their thoughts with another pair.

PREDICTION PAIRS

What will happen next	Reasons from reading

Appendix O

"Story on a Rope"

Activities: Story on a Rope

Skills Addressed: Primary, visual/spatial, intrapersonal, verbal/linguistic Secondary, analysis, decision making

Explanation/Grade Level:

In the third grade class, the students, while in the base groups, did the activity called "Story on a Rope". After each chapter of Stone Fox, the base group would discuss what they thought was the most important event of the chapter and then a student in the group would be appointed to illustrate that event on a 5" x 7" piece of construction paper. The illustrator would change for each chapter. When each chapter illustration was complete, it would be labeled by its chapter number, then hung on a long string. When the book was completed each base group would have ownership of a "Story on a Rope".

Appendix P

"Mrs. Potter's Questions"

Activity: Mrs. Potter's Questions

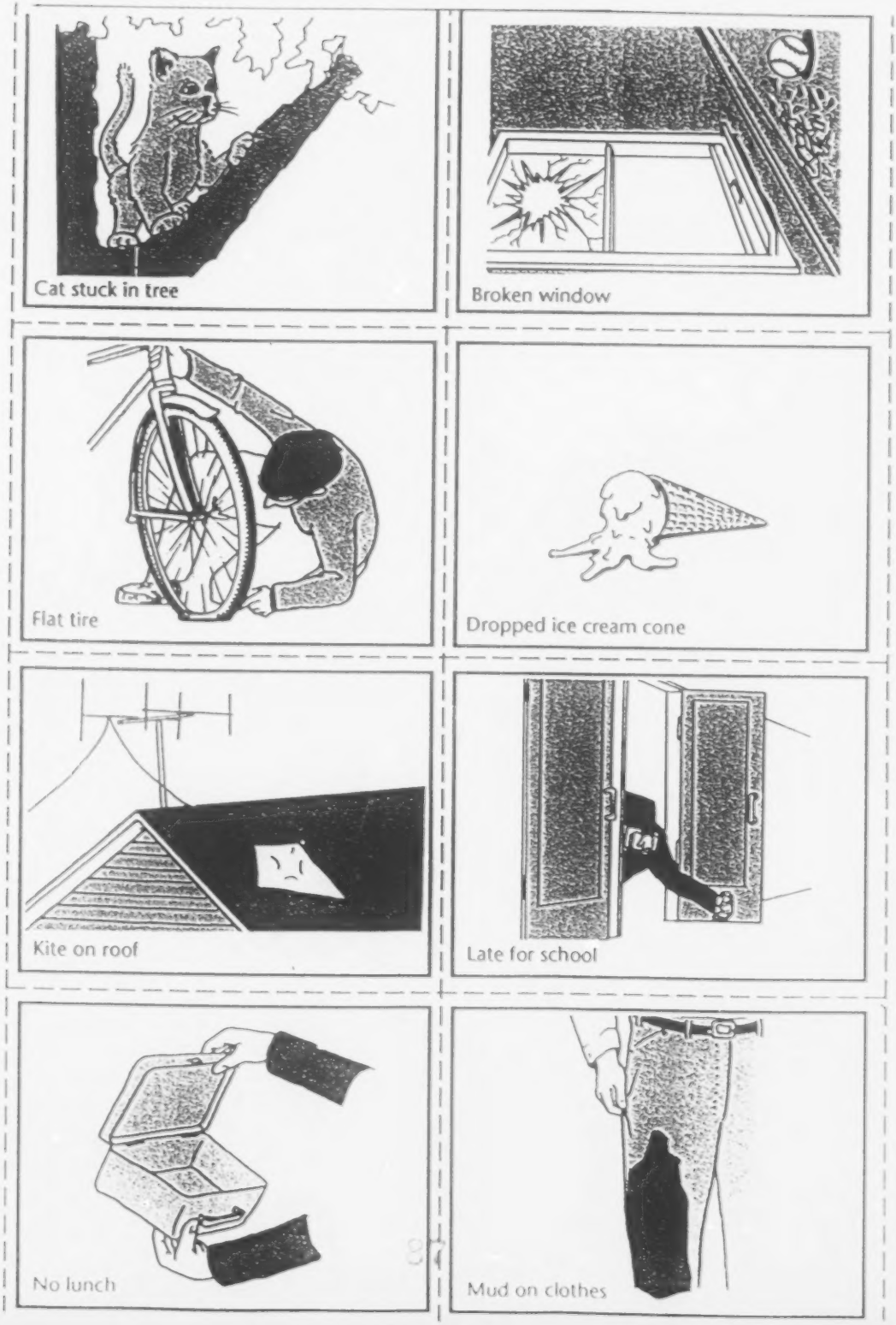
Skills Addressed: Primary, evaluate; Secondary, judge, explain, analyze, describe

Explanation/Grade Level:

Mrs. Potter's questions are a list of questions that help students through the process of self reflection. The students use questions such as "What did you do will?", "What would you do differently?", "What did you learn?", and "Do you need any help?" after a project or an activity to help them focus on their learning. Questions are listed on individual cards for each student as well as on a class poster. This activity can be successful at all grade levels.

Appendix Q

"Picture Problems"



Appendix R

"Book Summary"

Activity: Book Summaries

Skills Addressed: Primary, visual/spatial; Secondary, recall, sort, analyze

Explanation/Grade Level:

In the fifth grade class, the students read a book of their choice to retell in a book summary. The story must have a definite beginning, middle, and end. A book summary is a strip of pictures used to retell a story visually. The student divides a piece of construction paper into nine sections. The first three sections picture the beginning of the story. The second three sections retell the middle of the story, and the last three sections picture the end events of the story. Each section is sequenced according to the events in the story.

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